



# Severe Weather And Safety

## Tornadoes



A tornado is a rapidly rotating column of air in contact with the ground. A visible cloud is not needed for a tornado to be in progress. Some tornadoes may not appear to extend to the ground but are causing considerable damage. Tornadoes take on various shapes and sizes, and most produce winds less than 120 mph. However, a few are capable of producing winds over 200 mph. Some tornadoes are very small and last for only a minute or so, while others can be a mile wide or larger and stay on the ground for over an hour.

### DID YOU KNOW?

**Tornado Warnings can be issued without a Tornado Watch already being in effect.**

### WHAT TO LISTEN FOR:

#### ***Tornado Watch:***

Issued by the National Weather Service when conditions are favorable for the development of tornadoes in and close to the watch area. Watches are generally issued for the duration of 4-8 hours, well in advance of the actual occurrence of severe weather. During the watch, people should be prepared to move to a place of safety if threatening weather approaches.

#### ***Tornado Warning:***

Issued by the National Weather Service when a tornado is indicated by radar or sighted by spotters. People in the affected area should seek safe shelter immediately.

#### ***Tornado Emergency:***

A Tornado Emergency is issued by the National Weather Service. It is not a new warning, but is used to highlight a confirmed tornado which is expected to be strong and violent. A Tornado Emergency means that significant, widespread damage with a high likelihood of numerous fatalities is expected to continue.



NOAA National Severe Storms Laboratory

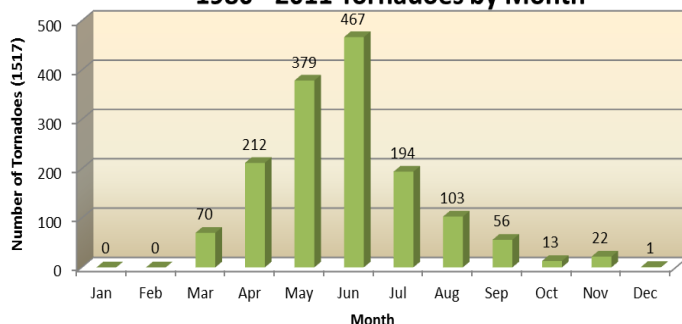


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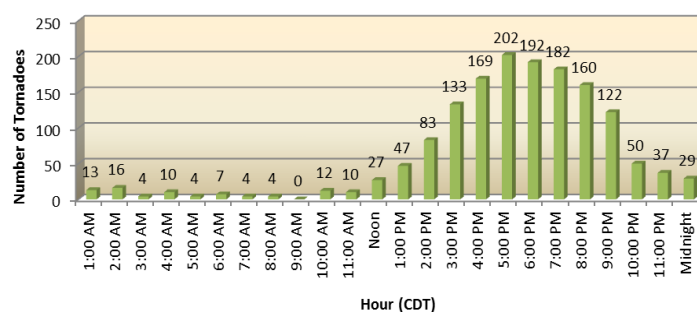
# TORNADOES IN IOWA

Tornadoes have occurred during any time of the day across Iowa and in each month of the year. However, they are most likely to form in the late afternoon and early evening hours during the months of April, May and June. The following graphs show the distribution of tornadoes across Iowa. Data is from 1980-2011. For more information about tornadoes in Iowa, see the climate section of our website: [weather.gov/desmoines](http://weather.gov/desmoines).

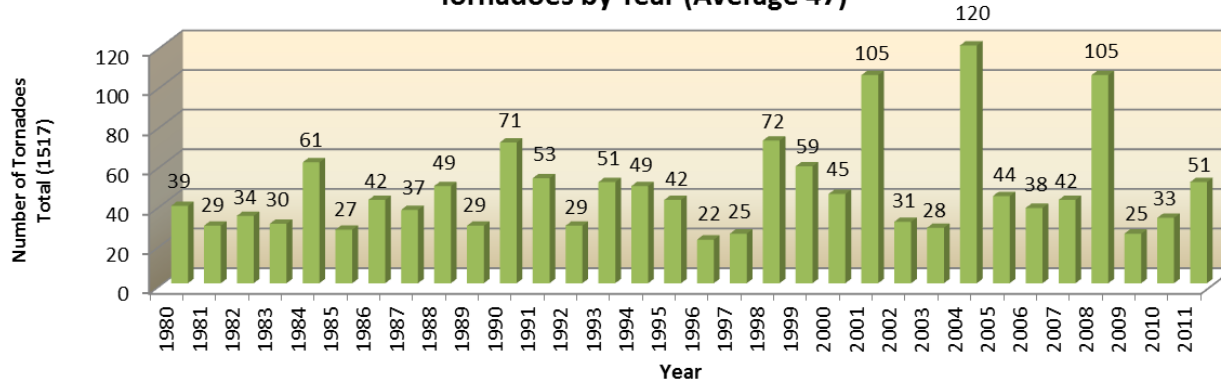
**1980 - 2011 Tornadoes by Month**



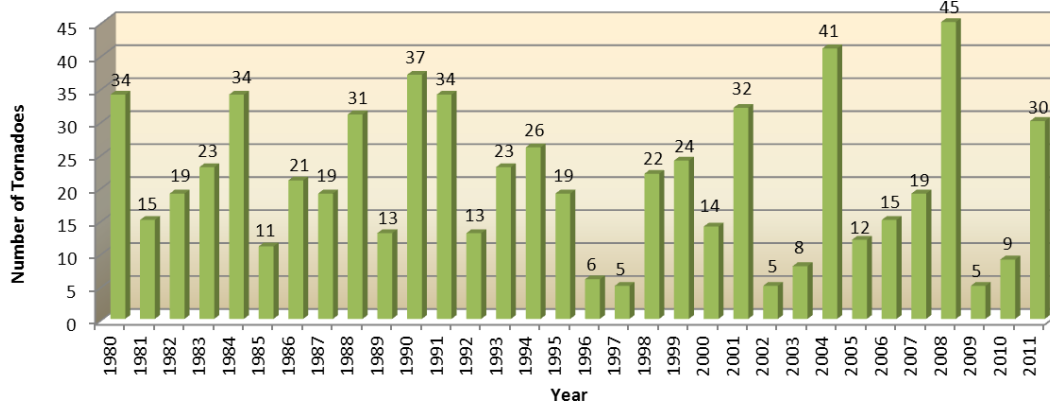
**Tornadoes by Time of Day (CDT)**



**Tornadoes by Year (Average 47)**



**1980 - 2011 EF1 or Greater Tornadoes by Year**



In 2012 Iowa saw a total of 16 tornadoes. Of these tornadoes, 7 were rated EF0; 6 were rated EF1; 3 were rated EF2; there were no EF3 or stronger tornadoes. There were 6 injuries and no deaths reported with the tornadoes. All of the tornadoes occurred in April and May. This is the earliest end to the Iowa tornado season since reliable records started in 1980.



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## THE EF SCALE

The severity of a tornado is expressed through the use of the Enhanced Fujita Scale ("EF Scale"). The EF Scale became operational on February 1, 2007 and is used to assign a 'rating' to a tornado based on estimated wind speeds and related damage. It is important to note that the EF Scale is a set of wind estimates, not wind measurements. The estimates are derived based on the damage done by a tornado to homes, crops, trees, etc. An EF Scale rating is determined based on the highest wind speed which occurred within a damage path.



The EF Scale was revised from the original Fujita Scale ("F Scale") to align wind speeds more closely with associated storm damage. The Fujita Scale is named after Dr. T. Theodore Fujita who first introduced the scale in 1971. The new EF Scale is now used in place of the F Scale. The main difference between the F and EF Scale is that the EF Scale takes into account the construction of structures damaged by a tornado.

Tornadoes are rated as follows:

EF0 - EF1: Weak  
EF2 - EF3: Strong  
EF4 - EF5: Violent

## TORNADOES AND OVERPASS SAFETY

Many people mistakenly think that highway overpasses provide safety from a tornado. In reality, an overpass may be one of the worst places to seek shelter from a tornado. Seeking shelter under an overpass puts you at greater risk of being killed or injured by flying debris.

Tornadic winds can make the most benign item a dangerous missile. In addition to the debris that can injure you, the winds under an overpass are channeled and could easily blow you or carry you out from under the overpass.

F Scale	Wind Speed	EF-Scale	Wind Speed
F0	45-78	EF0	65-85
F1	79-117	EF1	86-109
F2	118-161	EF2	110-137
F3	162-209	EF3	138-167
F4	210-261	EF4	168-199
F5	262-317	EF5	200-234

Wind speeds in mph, 3-second gust



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# **TORNADO SAFETY**

## ***What You Can Do!***

### **BEFORE THE STORM:**

- ▼ Know the county in which you live and the names of nearby cities.
- ▼ Have a NOAA Weather Radio with a warning alarm tone and battery backup.
- ▼ Make sure your family and people in your workplace are familiar with these safety precautions. Review the procedures and practice them.

### **IN A HOME OR BUILDING:**

- ▼ Move underneath a table, workbench or staircase.
- ▼ Stay away from the corners of the room because debris is usually displaced into those areas.
- ▼ Mobile homes, even if tied down, offer little protection from tornadoes and should be abandoned.
- ▼ If an underground shelter is not available, move to the lowest, most interior room available.
- ▼ Stay away from windows.

#### **REMEMBER TO DUCK:**

- D**– Down to the lowest level like a basement or interior room on the first floor.
- U**– Get **U**nder something sturdy.
- C**– Cover your head.
- K**– **K**eeP in your shelter until the storm has Passed.

### **IN AN OFFICE BUILDING, SHOPPING MALL OR SCHOOL:**

- ▼ Go into an interior hallway and crouch on the ground floor against a wall.
- ▼ Cover your head with your hands.
- ▼ Leave wide-open rooms like gyms, auditoriums, or the common areas of shopping malls.

### **IF YOU ARE CAUGHT OUT IN THE OPEN OR IN A VEHICLE:**

- ▼ Never try to outrun a tornado especially if it is nearby. Tornadoes can move at speeds of over 50 mph and change directions quickly.
- ▼ Highway overpasses are not safe shelters for tornadoes and should be avoided.

